

**Small Aircraft Transportation System (SATS)
Joint Sponsored Research and Development Agreement**

**National Aeronautics and Space Administration,
Langley Research Center**

and

National Consortium for Aviation Mobility

May 2002

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- Recitals -

- (1) The past seven years of investment by the National Aeronautics and Space Administration (NASA) in general aviation aircraft technologies, coupled with changes in liability legislation, have led to the emergence of a new generation of small aircraft. The NASA contributions to this new generation of safe and affordable aircraft were made through the Advanced General Aviation Transport Experiments (AGATE) Alliance and the General Aviation Propulsion (GAP) Program. The technologies developed, coupled with the General Aviation Revitalization Act of 1994 and the burgeoning market demand, have supported a dramatic industrial recovery over the past five years. The combined impact of these factors has resulted in more than a 300 percent growth in aircraft deliveries; more than a 350 percent growth in industry billings; over 20 percent improvement in fleet safety; recovery to about 20 percent of export deliveries; and about a 10 percent annual growth of jobs in this sector.
- (2) New aircraft currently going into production have greatly benefited from NASA research. The aircraft include twin turboprop-powered, four- to six-place pressurized aircraft, and several new single-engine aircraft. These new aircraft possess near-all-weather operating capabilities and are compatible with the modernization of the National Airspace System (NAS). However, these new aircraft will not make the new transportation innovation fully available to the general public unless new airborne technology concepts for airspace architecture and operations can be developed. The objective of the Small Aircraft Transportation System (SATS) project is to demonstrate the feasibility of these technology concepts for future commercial deployment.
- (3) More than 98 percent of the U.S. population lives within a 30-minute drive of one of the over 5,000 public-use landing facilities. This infrastructure is an untapped national resource for mobility. The vision of SATS offers a safe travel alternative, freeing people and products from transportation delays by creating access to more communities in less time. SATS is based on a new generation of affordable small aircraft operating in a fully distributed system of small airports serving thousands of suburban, rural, and remote communities. The safe, efficient utilization of smaller aircraft and smaller airports can provide a revolution in community accessibility and in public mobility. The system of enabling technologies can be developed and integrated to give the nation near-all-weather access to virtually every runway of these public-use facilities.
- (4) Today, small aircraft operating in airspace typical of small community airports are limited to "one-in, one-out" accessibility in low-visibility conditions. Air traffic controllers limit only one aircraft at a time in the airport vicinity due to the lack of both radar coverage and reliable communications. The SATS concept integrates high bandwidth wireless communications and Global Positioning System (GPS) technologies to enable multiple aircraft to land and takeoff at community airports

even under reduced visibility weather conditions, and without the need for expensive control towers and ground-based radar systems.

- (5) The SATS program will conduct laboratory, simulation, and flight experiments of the integrated technologies. Flight demonstrations will test the viability of the small aircraft transportation system concept, demonstrating key airborne technologies for precisely guided accessibility in small aircraft at non-towered airports and in non-radar airspace. The knowledge generated from these flights can be used by decision-makers responsible for addressing the nation's air transportation needs.
- (6) NASA will contribute approximately \$40 million in funding for collaborative work during Federal fiscal years 2002 through 2005 in three technical areas: enabling airborne technologies, including airborne flight path management systems and flight deck technologies; technology integration and flight demonstrations; and transportation systems analysis and assessments.
- (7) A broad range of general aviation organizations must be involved in the testing and demonstration of the SATS technologies to assure the results will be deployed in real-world situations thereby establishing the link between developer/supplier and end user. The NASA strategy is to implement the SATS Program through a partnership between the Federal Government and a consortium of private sector organizations and public agencies.

Purpose, Parties, and Authority

The SATS Program will focus on technology and business deployment innovations too risky and costly for any one entity or sector to undertake. Successful development and commercial deployment of SATS technologies and integrated systems requires coordination among a broad range of stakeholders. The NASA strategy is to implement the SATS Program through a partnership between the Federal Government and a consortium of industry participants, academic and non-profit organizations, and public agencies. NASA plans to accomplish the SATS Program principally through this Agreement.

This collaborative approach will engage state and local aviation authorities, airport operators, general aviation airframe manufacturers, transportation services suppliers, transportation research institutes, and suppliers of communication, navigation and surveillance systems for small transportation aircraft in a manner in which they collectively share in the investment and results of the long-term outcome of the SATS concept and technologies.

1.1 Purpose

The purposes of this Agreement are to:

- (i) Accelerate and leverage the cost of the development, integration, demonstration, and commercial deployment of SATS technologies.
- (ii) Stimulate private sector commitment to develop a long-term technology investment strategy that will lead to the further commercialization of SATS technologies.
- (iii) Achieve open technology standards development and the integration of SATS operating capabilities into the NAS, enabling the growth of an alternative short-haul air transportation system that will enhance regional mobility and economic growth.
- (iv) Create a collaborative research and demonstration environment coordinating public and private resources among diverse sectors.
- (v) Promote public education and outreach related to SATS concepts and technologies.

1.2 Parties

The Parties to this Agreement are the National Aeronautics and Space Administration, Langley Research Center (NASA) and the National Consortium for Aviation Mobility (NCAM), acting on behalf of the members of the consortium.

1.3 Authority

NASA enters into this Jointly Sponsored Research and Development Agreement (“this Agreement”) under the authority of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 *et. seq.*), as amended by the Federal Technology Transfer Act of 1986 (15 U.S.C. 3710a, 15 U.S.C. 3710a(f)). NASA will support research tasks under this Agreement under Section 203(5) of the National Aeronautics and Space Act of 1958, as amended (42 U.S.C. 2473(c)(5)).

- Article 2 - **Term of Agreement**

This Agreement shall remain in effect for a period of five (5) years from the latest date of execution.

- Article 3 - **Correspondence**

- 3.1 Official correspondence to NASA will be delivered to the General Aviation Program Office, Program Manager, NASA Langley Research Center, Mail Stop 916, Hampton, VA 23681.
- 3.2 Correspondence to NCAM will be delivered to P.O. Box 7429, Hampton, Virginia, 23666-0429 until co-location at the SATS facility is implemented. After co-location is completed, correspondence to NCAM will be delivered to 3130 N. Armistead Avenue, Hampton, Virginia 23665.
- 3.3 NCAM shall be responsible for communicating with NASA on behalf of its members and shall designate a point of contact.

- Article 4 -

Commitment to Commercialization

- 4.1 A fundamental goal of this Agreement is to enable the development, demonstration, and commercial deployment of the integrated SATS technologies. The members of NCAM agree to diligently pursue, to the maximum extent practicable, the commercialization of technologies developed under this Agreement.
- 4.2 NCAM shall require each of its for-profit members to report its commercialization efforts and shall provide this information to NASA in accordance with the reporting requirements of Article 22. The purpose of these reports is to track and assess progress toward commercial deployment of the results of this initiative.

- Article 5 -

Consortium Membership and Organization

- 5.1 As the representative of its member organizations, NCAM will interface with NASA on behalf of the consortium. NCAM is responsible for performance of its members' responsibilities under this Agreement and for internal management of its membership. NCAM will maintain a management team of core personnel and will designate one person as the official point of contact with NASA.
- 5.2 An essential purpose of the SATS project is to accelerate the development and commercial deployment of technologies that will promote the technological leadership and competitive position of the U. S. general aviation industry. The following qualifications are required of NCAM and its members:
 - (i) NCAM and its members must be incorporated to do business in the United States, or if a university or non-profit member must be state or local government organizations or be private organizations majority owned and controlled by United States citizens, and must conduct a substantial portion of their research, development, and manufacturing in the United States.
 - (ii) Members of the NCAM consortium must agree to conduct all of the research and development activities under this Agreement in the United States, and to substantially manufacture in the United States any products developed pursuant to this Agreement.

5.3 The NCAM membership must include for-profit organizations capable of commercializing the SATS technologies. The membership may also include universities, non-profit organizations, state, local, or regional organizations, and other organizations NCAM determines to be useful for fulfilling the objectives of the SATS project. The membership of NCAM may change during the period of this Agreement, although the consortium is expected to maintain representation from each of the following sectors throughout the duration of this Agreement. Changes to the NCAM membership are at NCAM's discretion. NCAM shall notify NASA of membership changes.

- **Airport operators-** Fixed Base Operators (FBO's) supplying services at any airport within the state of a matching state aviation authority member.
- **Airframe manufacturers-** Assemblers of any category of general aviation aircraft that are utilized for personal and package transport.
- **Suppliers of communication, navigation and surveillance (CNS) hardware, software and services-** Organizations which develop, sell and service the hardware and software which support CNS capabilities for general aviation aircraft.
- **Transportation services suppliers-** Organizations that integrate general aviation aircraft with other services to supply transport for individuals or packaged goods. These organizations include, by example, aircraft fractional ownership, air charter, package delivery, and businesses that operate general aviation aircraft for their internal use.
- **Transportation research and simulation-** Organizations that provide transportation systems research, modeling and analysis, and flight simulation capabilities.
- **State aviation transportation authorities-** Departments responsible for the implementation of all state aviation authority, program, and federal coordination within a given state.
- **Local airport aviation authorities-** City, county and regional authorities responsible for the operation of one or more local airports.

- Article 6 -
Key Responsibilities

6.1 NASA Responsibilities

- Develop NASA's tasks for the annual research and technology (R&T) plan based on the overall goals and objectives of the SATS Program.
- Coordinate with NCAM, through the Technical Teams, Technical Coordinating Council and Strategic Council, to ensure the NASA and NCAM planned tasks form an integrated annual R&T plan.
- Review the integrated annual R&T plan.
- Approve the tasks in the annual R&T plan performed or funded by NASA. Decisions regarding NASA's performance and funding of work will be made solely by NASA. For tasks performed and funded solely by NCAM, which NCAM plans to count as in-kind resources under this Agreement, NASA will determine the relevance and allowability of these contributions as part of the annual R&T plan.
- Provide and manage NASA funds and in-kind resources, including personnel, facilities, equipment, and aircraft, as NASA determines to be appropriate, to support the annual R&T plan.
- Provide funding for the leased SATS project facility, communications infrastructure, and MIS.
- Provide guidance for the project through its roles in the Strategic and Technical Coordinating Councils.
- Perform the research and development activities agreed to in the annual R&T plan.
- Provide Flight Safety Release reviews of SATS experimental and demonstration flights.

6.2 NCAM Responsibilities

- Develop NCAM's tasks for the annual R&T plan based on the overall goals and objectives of the SATS Program.
- Coordinate with NASA, through the Technical Teams, Technical Coordinating Council and Strategic Council, to ensure the NCAM and NASA planned tasks form an integrated annual R&T plan.

- Review the integrated annual R&T plan.
- Approve the tasks in the annual R&T plan performed or funded by NCAM.
- Provide and manage NCAM funds and in-kind resources, including personnel, facilities, equipment, and aircraft, as appropriate to support the annual R&T plan.
- Assume the lease and operational responsibility for the SATS project facility.
- Provide guidance for the project through its roles in the Strategic and Technical Coordinating Councils.
- Perform the research and development activities agreed to in the annual R&T plan, including coordination and management of the technical work of its members.
- Perform management functions for its membership, including:
 - Project Management
 - Financial Management
 - Intellectual Property Asset Management
 - Information Systems Management
 - Long-term Technology Investment Planning
 - Technical Support for Governmental Transportation Analyses
 - Liaison for Certifications and Standards
 - Public Relations for the Consortium
 - Internal Consortium Education and Facilitation

- Article 7 -

Operations and Management

7.1 Strategic Council

The Strategic Council includes representatives from both Parties and is a forum for the Parties to discuss activities of the SATS partnership to accomplish the project objectives. NASA representatives will be Government personnel. NCAM representatives will be NCAM members. The Parties will jointly determine operating procedures for the Strategic Council, to be documented in an appendix to this Agreement, and will discuss the areas of expertise that should be included in the council representation. Responsibilities of the Strategic Council include:

- Reviewing the annual R&T plan and budget

- Advising on project implementation and operational issues
- Planning long-term business and technical strategies for the SATS project
- Reviewing outreach activities for the SATS project

7.2 **Technical Coordinating Council**

The Technical Coordinating Council will be a forum for the Parties to coordinate the collaborative technical activities of the SATS project. The Technical Coordinating Council shall have a NASA and NCAM co-chair, and will be composed of the team leads from the technical teams and other technical representatives as appropriate. The Council's responsibilities include:

- Communicating and coordinating research across all of the technical teams
- Reviewing the systems engineering documents and systems integration/interface requirements
- Preparing the integrated annual R&T plan and ensuring consistency with the systems engineering documents and systems integration/interface requirements
- Identifying technical areas requiring participation on standards teams or development of certification path guidelines
- Providing a forum for the technical experts and team leaders to raise and resolve cross-cutting technical issues, such as communications, navigation and surveillance interface standards and certification, vehicle integration, airspace integration, system software integration, and flight operations issues related to the design and conduct of the integrated technology flight demonstrations
- Forming cross-cutting working groups as necessary

7.3 **Technical Teams**

The technical teams, which may consist of SATSLabs or teams otherwise composed of NCAM members, are state or regional SATS demonstration partnerships within NCAM. Government personnel will interface with each technical team. Technical teams are responsible for:

- Analysis, modeling, simulation, technology integration, prototype development, flight experiments and demonstrations
- Transportation systems assessments
- Providing information and raising technical research and coordination issues to the Technical Coordinating Council

- Article 8 -

Annual Research and Technology Plans

- 8.1 The Parties will develop an integrated annual R&T plan for a research program that includes laboratory, simulation, and flight experiments.
- 8.2 The annual R&T plan will include:
- Technical objectives and milestones for the year
 - Technical tasks with a statement of work for each task
 - Assignment of tasks among the membership of the NCAM consortium and the Government
 - Allocation of resources for each NCAM task, with budgets broken out into cost categories for labor hours, labor costs, equipment, travel, and other costs. Each cost category will indicate the amount funded by NASA and the amount provided as NCAM funding or in-kind.
 - Documentation supporting the cost categories for each NCAM task
 - Schedule of work for each task
 - SATS Product Data required as deliverables for each task

- Article 9 -

Modifications

- 9.1 Either Party may propose a modification to this Agreement by submitting the proposed modification and an explanatory statement. If approved by both Parties, the modification shall become effective upon execution of a written, bilateral amendment to the Agreement.
- 9.2 Annual R&T plans may be modified by agreement of the Parties. The annual budget and funding will be revised in accordance with the modified plan.

Modifications to planned NASA activities will be determined solely by NASA. NASA shall notify NCAM and the Strategic Council of such modifications.

- Article 10 -

Funding and Resource Contributions

10.1. Resource Share

10.1.1 NASA and NCAM shall share in providing the resources necessary to perform this Agreement. The dollar value of NCAM's combined funding and in-kind contributions for research activities shall be equal to the amount of funding NASA provides to NCAM for research activities.

10.2. NASA Funding and Resources

10.2.1 The total maximum estimated NASA funding for this Agreement is \$40 million, which shall be allocated on a Federal fiscal year basis and obligated as appropriated funds become available. Only amounts actually obligated by a NASA contracting officer shall be available for disbursement. Under no circumstances shall NCAM or its members undertake any actions that could be construed to imply an increased commitment of NASA funding without prior written approval by NASA. The maximum estimated NASA funding per Federal fiscal year is as follows:

Fiscal Year	In \$M				Total
	FY02	FY03	FY04	FY05	
Estimated Funding	5	16	16	3	40

10.2.2 NASA funds shall be obligated by the contracting officer, who shall provide written notification to NCAM when funding has been obligated and is available for performance of tasks under the annual R&T plan.

10.2.3 Estimated funding amounts for each task shall be agreed upon and approved in the annual R&T plan. NASA shall provide funding based on estimated costs for each task, not to exceed the amount established in the annual R&T plan. NASA is under no obligation to provide additional funds for activities conducted under this Agreement in general or for any particular task. Additional costs in excess of the funds obligated are incurred at the Partner's risk. Funding for a task may be increased only as commensurate with an increase to the scope of work, upon written agreement by the Parties.

- 10.2.4 NASA's performance of its obligations under this Agreement is subject to the availability of appropriated funds. Nothing in this Agreement commits the United States to obligate funding for the purposes stated in this Agreement or in violation of the Anti-Deficiency Act, 31 U.S.C. 1341.
- 10.2.5 NASA will assign NASA personnel, facilities, and equipment for the purposes of this Agreement in accordance with the annual R&T plan as approved by NASA.
- 10.2.6 NASA funding transferred under this Agreement for a particular task may be subject to additional terms and conditions as specified in the accompanying award document. In the event there is a conflict between this Agreement and the award document for a particular effort, the terms in this Agreement shall take precedence.

10.3. NCAM Funding, Resources, and Allowable Costs

- 10.3.1 NCAM's matching resource share as required under 10.1.1 for the research activities under this Agreement applies to the NCAM consortium membership collectively. NCAM's cost share for each task will be on an equitable basis depending on the nature of the task. NCAM may allocate resource contributions among its membership in accordance with its by-laws and operating plan and as agreed to in the annual R&T plan. To the extent practicable for each task, each for-profit member of the consortium contributes at least 50% of the total dollar value of tasks it performs under this Agreement. Universities and non-profit members are not necessarily required to provide resources at the same levels as for-profit members.
- 10.3.2 All resource contributions, including cash and in-kind resources, must meet all the following criteria to be acceptable as part of NCAM's cost share. All incurred costs to be reimbursed by NASA also must meet the following criteria:
- (i) Are verifiable from the records of the NCAM members
 - (ii) Are necessary and reasonable for performing tasks in the annual R&T plan and are charged to such tasks
 - (iii) Are allowable under the applicable cost principles
 - (iv) Are included in the approved annual R&T plan
 - (v) Are not paid by the Federal Government under any other contract, grant, or agreement with NCAM or its members
 - (vi) Are not included as contributions by NCAM or its members under any other Federal contract, grant, or agreement

A cost is reasonable if, in its nature and amount, it does not exceed that which would be incurred by a prudent person in the conduct of competitive business.

- 10.3.3 The allowability of costs and resource contributions by the NCAM members shall be determined based on the cost principles applicable to the entity incurring the cost. State and local governments shall comply with the provisions of OMB Circular A-87. Non-profit organizations shall comply with the provisions of OMB Circular A-122. Institutions of higher education shall comply with the provisions of OMB Circular A-21. For-profit organizations shall comply with Generally Accepted Accounting Principles (GAAP), and Part 31 of the Federal Acquisition Regulations (FAR) shall be used as a guide in determining allowable, allocable, reasonable costs.
- 10.3.4 Fees, profits, and foregone revenue for any member of the NCAM consortium are unallowable and may not be included in the NCAM cost share. However, NCAM and its members may pay profit to their suppliers and subcontractors who are not members of the NCAM consortium under this Agreement.
- 10.3.5 Rent for the lease of the SATS project facility shall be an allowable cost, but shall not be included as part of NCAM's required matching cost share.
- 10.3.6 NCAM and its members may incur allowable costs necessary and reasonable for performance of tasks approved in the annual R&T plan, up to ninety (90) calendar days prior to official notification of fund availability. All such costs are incurred at the NCAM's risk. NASA is under no obligation to reimburse such costs.
- 10.3.7 All resource contributions by the NCAM members, including cash and in-kind contributions, must be verifiable from the members' records. NCAM shall ensure that its members maintain documentation to support their costs, and shall provide such documentation to NASA upon request. NCAM shall perform a valuation of the in-kind contributions of its members in support of the annual R&T plan, subject to audit by the Government.
- 10.3.8 Any Federal funds paid to NCAM in excess of the amount to which NCAM is finally determined to be entitled under the terms of this Agreement and the relevant annual R&T plan constitute a debt to the Government and may be recovered from NCAM regardless of distribution by NCAM to its members.
- 10.3.9 Nothing in this Agreement shall be construed to obligate future appropriations of a state or local government member of the NCAM consortium in violation of state or local law. However, such members remain liable for resource commitments agreed to in each annual R&T plan.

- Article 11 -
Payment Procedures

- 11.1 NCAM shall submit a monthly invoice to NASA inclusive of all work performed by its members, including a cost breakdown by task by member. Payments by NASA shall be made on a cost-incurred basis. NCAM shall provide documentation supporting its members' incurred costs when and to the extent requested by NASA. NASA may disallow claimed costs that are not adequately supported.
- 11.2 Payment by NASA is contingent upon verification by the program office that the technical work has been satisfactorily completed and authorization by the NASA LaRC Office of the Chief Financial Officer (OCFO). NASA will make payment on invoices as soon as practicable after receipt by the OCFO.
- 11.3 Payment of NASA funds to NCAM shall be made by electronic transfer.
- 11.4 By submission of the first invoice, NCAM certifies that it has an established accounting system which complies with the terms of this Agreement and the appropriate accounting principles under Article 10.3.3, and that it has made appropriate arrangements for receiving, distributing, and accounting for Federal funds received under this Agreement.

- Article 12 -
Use of NASA Facilities

- 12.1 NCAM may request services provided by NASA LaRC facilities for the performance of its responsibilities under this Agreement. To the extent practicable, such services shall be addressed in the annual R&T plan and included in the calculation of NASA's annual in-kind resource contribution. The value of such services may not be included as part of NCAM's cost share or resource contribution. To the extent NCAM requests additional services in performance of its responsibilities under this Agreement, such services may be provided on a reimbursable, as-available basis. To the extent NCAM or its members request services not related to the activities of this Agreement, which are not reasonably available in the commercial sector, such services may be negotiated under a separate reimbursable agreement.
- 12.2 Scheduling of work in NASA LaRC facilities is subject to availability, and NASA in its sole discretion shall determine priority of use among NASA activities, work performed in relation to this Agreement, and work requested by other entities.

- 12.3 Work in NASA LaRC facilities shall be described in writing in sufficient detail to clearly define the specific activities, establish a schedule, and enable a reasonable cost estimate.
- 12.4 NCAM shall fully reimburse NASA LaRC for work not already included as in-kind NASA costs in the annual R&T plan which NCAM requires in order to perform its responsibilities under the annual R&T plan. NCAM must fund this work with its own resources, and may not use funding received from NASA to pay for this work. Payment shall be made in advance in U.S. dollars by check payable to "NASA Langley Research Center." NASA LaRC shall provide a cost estimate prior to commencement of the work.

- Article 13 -
Facility Co-location

- 13.1 NCAM shall co-locate its management team, and technical personnel as necessary, with NASA program management and technical personnel in the SATS facility adjacent to NASA Langley Research Center.
- 13.2 NCAM shall be responsible for leasing the SATS facility, contingent upon obtaining a new lease i) at the same rent and termination cost as the existing NASA lease for the facility, and ii) allowing NCAM to terminate the lease upon the termination or other unavailability of Government funding for lease obligations under this Agreement.
- 13.3 NCAM is responsible for facility maintenance, security, and safety, with the exception that access to NASA offices and the room housing the NASA network server shall be restricted.
- 13.4 NCAM agrees to maintain liability insurance covering damage to the facility and personal injury or death to any persons, and to require the same of its members working in the facility.
- 13.5 NCAM is responsible for foreign nationals' access to the facility, and shall implement appropriate measures to ensure physical and computer security. Foreign national access onto NASA Langley Research Center requires prior approval of the NASA LaRC Office of Security. NCAM is responsible for obtaining the required approvals.
- 13.6 NASA shall reimburse NCAM for the lease expenses to the extent allowable in the cost principles of the applicable OMB Circular. NASA also shall reimburse NCAM for lease termination costs, but only in the event that this Agreement is

terminated or NASA and NCAM otherwise mutually agree to terminate the lease. NASA is not responsible for termination costs resulting from other causes, including breach of the lease by NCAM or the negligence or willful conduct of NCAM or its members.

- Article 14 -

Use and Disposal of Tangible Property

- 14.1 Title to property furnished by NASA remains with the U.S. Government. When NASA-furnished equipment is no longer needed for the purpose of performing work under this Agreement, NCAM will notify NASA and dispose of the property as directed by NASA in accordance with the Federal Property and Administrative Services Act.
- 14.2 Property acquired by NCAM or its members with funding provided by NASA under this Agreement will be titled, reported, and disposed of as follows:
- (i) Supplies (personal property valued at less than \$5000) are titled to the acquiring entity and are exempt from NASA reporting and disposal requirements.
 - (ii) Title to property valued in excess of \$5000, acquired by university or non-profit members of the NCAM consortium for research purposes, vests in the acquiring entity. Such property is exempt from NASA reporting and disposal requirements.
 - (iii) Title to property valued in excess of \$5000, acquired by for-profit members of the NCAM consortium, vests with the U.S. Government, is subject to the reporting requirements in Article 22, and shall be disposed of as directed by NASA.
 - (iv) For-profit members of the NCAM consortium may not purchase general purpose property, including but not limited to office equipment and furnishings, motor vehicles, reproduction and printing equipment, and automatic data processing equipment, as a direct charge to this Agreement but may include such property as indirect costs in accordance with the applicable cost principles.
- 14.3 Title to property acquired by NCAM or its members with their own funds remains with the acquiring entity and is not subject to NASA reporting or disposal requirements.

- 14.4 NCAM is responsible for use of Government property by its members and shall submit an annual inventory report of all NASA-owned property in possession of its members according to the reporting requirements in Article 22.
- 14.5 Property provided by NASA or purchased with NASA funds may be used by NCAM and its members only for activities in performance of this Agreement.
- 14.6 Equipment costing in excess of \$5000, acquired with funds provided by NASA under this Agreement, may be acquired only if approved in the annual R&T plan or otherwise approved by NASA prior to purchase.

- Article 15 -
Travel

- 15.1 Each Party shall be responsible for authorizing, arranging, and funding the travel of its own personnel unless otherwise agreed in the annual R&T plan or otherwise approved in advance by NASA.
- 15.2 NCAM may provide travel for NASA personnel when such travel is necessary and reasonable for performing specific technical activities under this Agreement as established in the annual R&T plan, subject to advance approval by NASA. Such travel shall be provided as an in-kind contribution rather than as payment of funds to NASA or NASA personnel. NASA may not accept travel for any activities NASA personnel would otherwise perform in the course of their official duties.
- 15.3 Travel for activities that are not part of the annual R&T plan may be accepted by NASA in advance and in accordance with the Federal Travel Regulations.

- Article 16 -
Intellectual Property

16.1 Property Rights in Background Data

- 16.1.1 Data shall be exchanged between the Parties free of disclosure and use restrictions except as provided herein.

- 16.1.2 Background Data. Background Data means data developed by NCAM members at their own expense prior to or outside of this Agreement, which the developing member considers to be a trade secret or proprietary information. In the event it is necessary for NCAM members to disclose Background Data to NASA, the disclosing member shall mark such data with a clear notice or legend. Appropriately marked Background Data shall be maintained in confidence, and shall be used by NASA and its contractors (under suitable protective conditions) only for the performance of activities under this Agreement. Upon termination of this Agreement, such Background Data shall be disposed of as requested by the disclosing member. In the event of a third party request, NASA will withhold all appropriately marked Background Data to the maximum extent permitted by law. All appropriately marked Background Data shall remain the property of the disclosing member. The disclosing member does not grant or convey any license under any patent or technology simply by the act of delivering Background Data under this Agreement.
- 16.1.3 Oral or Visual Disclosure. If any Background Data is disclosed orally or visually, the disclosing member shall identify such Data as confidential at the time of disclosure and shall reduce such Data to tangible, recorded form, identified with a suitable notice, and furnished to NASA within ten (10) calendar days of the initial oral or visual disclosure. Otherwise, NASA shall have no duty to maintain such Data in confidence.
- 16.1.4 Background Intellectual Property. Nothing in this Agreement is intended to affect a Party's ownership, use, or licensing of Background Intellectual Property unless the Parties specifically agree otherwise. No Party acquires any rights in the other Party's Background Intellectual Property simply by entering into this Agreement, except as expressly provided for herein. A Party may, in its discretion, disclose its Background Intellectual Property to the other Party under nondisclosure or limited use agreements. Licensing of Background Intellectual Property by one Party to another, if agreed to by such parties, will be the subject of separate agreements.

16.2 **Rights in Data and Hardware Developed Under the Agreement**

- 16.2.1 SATS Products Data. Data and hardware produced or developed as a consequence of, or in direct relation to, the performance of activities under this Agreement are "SATS Products Data," and shall include, but not be limited to, designs; design, operation, and certification guidelines; product and product interface standards; databases; processes; computer software; devices and prototypes; technical reports and documentation; drawings; and electronic files. SATS Products Data shall be identified in the annual R&T plan. SATS Products Data shall be furnished and exchanged between the Parties without restriction as to its disclosure, use, or duplication except as otherwise provided in this

Agreement. The Parties shall use their best efforts to ensure that SATS Products Data does not contain any Background Data.

16.2.2 SATS Product Data First Produced Solely by NCAM and/or Its Members. Any SATS Products Data first produced by NCAM and/or its members, which would be considered a trade secret or commercial or financial information that is privileged or confidential under 5 U.S.C. 552(b)(4), shall be disclosed to NASA marked as “Restricted SATS Product Data”. Appropriately marked Data shall be maintained in confidence by both Parties for five (5) years from the time it is developed. The Parties may agree to a shorter protected period as appropriate for particular Data. The Government and its contractors (under suitable protective conditions) may disclose and use such Data by or on behalf of the Government only for experimental, test, or evaluation purposes during the protected period. At the end of the protected period, such Data may be used for any purpose whatsoever and without any restriction on disclosure or use.

16.2.3 SATS Product Data First Produced by the Government or Jointly by the Government and NCAM and/or Its Members. Any SATS Products Data first produced by the Government or jointly by the Government and NCAM and/or its members that falls under Section 303(b) of the Space Act (42 U.S.C. 2454) will be appropriately marked as “Restricted SATS Product Data” and maintained in confidence by both Parties for a period of five (5) years after the development of such Data. The Parties may agree to a shorter protected period as appropriate for particular SATS Product Data. During the aforesaid period, such Data may be disclosed and used (under suitable protective conditions) by or on behalf of the Government only for Government purposes. NCAM and its members may use and disclose (under suitable protective conditions) such Data during the protected period only for purposes of this Agreement and their own internal business purposes. At the end of the protected period, such Data may be used for any purpose whatsoever and without any restriction on disclosure or use. NCAM and its members agree not to disclose such SATS Product Data to any third party without the Government's written approval until the protected period expires. In the event NCAM or its members disclose restricted SATS Product Data to third parties during the protected period, without appropriate protective conditions, the restrictions of this article no longer apply to the Data that was so disclosed. NCAM and its members have unlimited rights in Government SATS Product Data not bearing a restrictive notice or legend.

16.3 **Reporting Data and Inventions**

16.3.1 Publications. Before either Party submits a paper or abstract for publication or otherwise intends to publicly disclose any SATS Product Data, the other Party shall be provided an opportunity to review the proposed publication or other disclosure. If the disclosure or use of such Data is otherwise limited or restricted herein, such limitation or restriction shall govern. Otherwise, the publication or

other disclosure shall be delayed for up to thirty (30) calendar days upon written request by either Party.

- 16.3.2 Copyright Reporting. The Parties shall promptly report to each other in writing any copyright registration they file on any original work of authorship created in performance of this Agreement. Each Party shall provide the other Party with copies of any such registration(s).
- 16.3.3 Invention Reporting. The Parties shall promptly report to each other in writing each invention developed under this Agreement reported to them by their respective employees or contractors, including the employees or contractors of the NCAM members. The NCAM members shall comply with the reporting requirements documented in the relevant appendix to this Agreement. The Receiving Party shall treat such written reports in confidence for a reasonable period of time in order for patent protection to be obtained. Each Party shall provide the other Party with copies of any application it files on such invention, including the claims, subject to the nondisclosure provisions of this Agreement.
- 16.3.4 No Party shall publish, orally or in writing, any Data restricted under the terms of this Agreement during the period of restriction unless approved in advance by both Parties.
- 16.3.5 Data that is not restricted under the terms of this Agreement may be published subject to prior approval by the Parties. The Parties shall have thirty (30) calendar days to review any proposed publication, and may withhold approval only if publication would disclose information restricted under the terms of this Agreement or imply official endorsement by NASA.

16.4 Copyright

- 16.4.1 Works Produced Solely by NCAM and/or Its Members. NCAM and/or its members shall retain ownership of copyrights for original works of authorship created solely by their employees, or made for hire for by a third party, or acquired by NCAM and/or its members from a third party in the course of the performance of this Agreement. The Government shall retain a royalty-free, nonexclusive, irrevocable, world-wide license to use, modify, prepare derivative works of, reproduce, distribute, perform, and display such copyrighted works by or on behalf of the Government for Government purposes. If copyright is asserted, such works shall contain a notice in accordance with 17 U.S.C. § 401 through 404 when delivered to NASA.
- 16.4.2 Works Produced Solely by the Government. Pursuant to 17 U.S.C. § 105, U.S. copyright protection is not available for works produced solely by Government employees in the performance of this Agreement. Unless other restrictions exist for such works, such works are in the public domain in the United States.

- 16.4.3 Joint Authorship. Ownership of copyrights of original, inseparable works of authorship jointly created by Government employees and NCAM and/or its members' employees in the course of performance of work under this Agreement are retained jointly by the Government and NCAM and/or its creating member. If copyright is asserted, such works shall contain a notice in accordance with 17 U.S.C. §§ 401 through 404 when delivered to the other Party. The Parties shall negotiate any registration and licensing of such copyright(s).
- 16.4.4 Background Copyrights. If Data is exchanged with a notice indicating that the Data is protected under copyright and it is indicated on the Data that the Data existed before or was produced outside of this Agreement, the Receiving Party, and others acting on its behalf, may reproduce, distribute, and prepare derivative works only for the purpose of carrying out the Receiving Party's responsibilities under this Agreement.
- 16.4.5 Copyrighted Software. Exchange of SATS Product Data which is software shall include its source code, object code, and support documentation, subject to the other limitations or restrictions on Data or an invention specified in this Agreement.

16.5 Ownership and Licensing of Inventions

16.5.1 Inventions Made by Members of the NCAM Consortium

The following rights shall apply to inventions made by NCAM and/or its members in performance of activities under this Agreement, whether funded by the Government, by NCAM and/or its members, or jointly. Whether the provisions in (i) or (ii) apply to an invention is determined by the status of the inventing entity, regardless of whether the inventing entity subsequently assigns its rights to NCAM. Small business and non-profit members are subject to the requirements of 35 U.S.C. 202 and 37 C.F.R. Part 401. Members other than small businesses and non-profit organizations are subject to the requirements of 42 U.S.C. 2457 and 14 C.F.R. Part 1245.

- (i) A small business or non-profit organization, including universities and institutions of higher education, may elect to retain its title and interests in the invention throughout the world, subject to certain license rights and reservations of the United States Government under 35 U.S.C. § 200 *et. seq.* The United States Government may acquire title to any such invention if the inventing entity does not file for or maintain patents thereon.
- (ii) In accordance with 42 U.S.C. § 2457, title to inventions made by an entity other than a small business or non-profit organization initially vests with NASA. The inventing entity may petition NASA for advance waiver of

rights to such inventions, subject to a Government license. NCAM members may submit such petitions as soon as they have executed a certification of agreement to the terms of this Agreement. The Government may retain title to any such invention if the inventing entity does not file for or maintain patents thereon.

- (iii) The United States Government retains a worldwide, irrevocable, non-exclusive, royalty-free license to use such inventions and have such inventions used by others for Government purposes.
- (iv) All patents and patent applications covering such inventions shall contain the following statement: "The invention described herein may be manufactured and used by or for the United States Government for United States Government purposes without payment of royalties thereon or therefor."

16.5.2 Inventions Made by the Government

The following ownership and license rights shall apply to inventions made by NASA under this Agreement and inventions made by NASA's support contractors performing work in support of NASA's activities under this Agreement:

- (i) An invention made by NASA employee(s) in performance of this Agreement shall belong to NASA. NASA hereby grants NCAM and its members the first option to acquire an exclusive, royalty-bearing, revocable license, on terms to be negotiated including the Field of Use, for any patent application filed or patent that may issue on such invention. The NCAM members collectively are granted the option to licensing rights that collectively encompass the rights that would be held under such an exclusive license by one entity. Such exclusive licenses are subject to the requirements of 15 U.S.C. 3710a(b)(1).
- (ii) NASA will exercise reasonable efforts to use civil servant employees to the extent practicable in performing its responsibilities under this Agreement. In the event a NASA support contractor is tasked to perform work in support of specified NASA activities under this Agreement, and NASA acquires title to inventions made by contractor employees in performance of those tasks, NASA hereby grants NCAM and its members the first option to acquire an exclusive, royalty-bearing, revocable license, on terms to be negotiated including the Field of Use, for any patent application filed or patent that may issue on such invention. The NCAM members collectively are granted the option to licensing rights that collectively encompass the rights that would be held under such an exclusive license by one entity. Such exclusive licenses are subject to the requirements of 15 U.S.C. 3710a(b)(1).

- (iii) Each such license under (i) and (ii) above is subject to a worldwide, nonexclusive, royalty-free, irrevocable right of the Government to practice such invention or have such invention practiced on behalf of the Government, and to other Government reservations authorized or required by law. NCAM and its members agree that any products embodying such inventions or produced through the use of such inventions shall be manufactured substantially in the United States.

16.5.3 Inventions Made Jointly by the Parties

Inventions made jointly by NASA employees and the employees of NCAM and/or its members in performance of activities under this Agreement shall be handled in the following manner.

- (i) For small business and non-profit entities, the Government may assign or transfer whatever rights it may acquire in the invention from its employee to the non-Government entity as authorized by 35 U.S.C. § 202(e).
- (ii) Entities other than small businesses and non-profit organizations may petition NASA for an advance waiver of rights to the entity's interest in the invention, subject to a Government license. With regard to NASA's interest in the invention, NASA hereby grants NCAM and its members the first option to acquire an exclusive, royalty-bearing, revocable license, on terms to be negotiated including the Field of Use, and agrees to cooperate with such entity in obtaining patent protection on the invention. The NCAM members collectively are granted the option to licensing rights that collectively encompass the rights that would be held under such an exclusive license by one entity. Such exclusive licenses are subject to the requirements of 15 U.S.C. 3710a(b)(1).
- (iii) All actions under (i) and (ii) above are subject to a worldwide, nonexclusive, royalty-free, irrevocable right of the United States to practice such invention or have such invention practiced on behalf of the United States Government, and to other Government reservations authorized or required by law. All patent applications and patents covering such inventions shall contain the following statement: "The invention described herein may be manufactured and used by or for the United States Government for United States Government purposes without payment of royalties thereon or therefor."

16.6 **Disclaimer of Liability for Intellectual Property Disclosure**

Notwithstanding the above requirements, no Party shall be restricted in, nor incur liability to the other Party for, disclosure and use of:

- (i) Data not identified with a notice or legend as required in this Article, or
- (ii) Restricted data which is or becomes known without breach of the terms herein; is known or generated by the receiving Party independently of performing its responsibilities under this Agreement; is rightfully received from a third party without restriction; is disclosed with the approval of the providing Party; or is disclosed pursuant to a valid court order.

- Article 17 - **Export Control**

- 17.1 NCAM shall comply, and ensure its members' compliance, with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR) and the Export Administration Regulations (EAR) in the performance of this Agreement.
- 17.2 NCAM shall be responsible for obtaining, and ensuring its members obtain, required export licenses for the export of hardware, software, technical data or technical assistance. This includes obtaining required licenses prior to utilizing foreign nationals where such persons may have access to controlled hardware, software, or technical data, whether on-site at NASA LaRC or at other locations.

- Article 18 - **Publications and Use of the NASA Name and Devices**

- 18.1 With respect to activities conducted under this Agreement, NASA does not endorse any commercial product or service of NCAM or its members, and NASA participation in the development or testing of a product does not constitute NASA's endorsement of the same.
- 18.2 NCAM and its members may publicly state that they are engaged in a joint research and development activity with NASA. Articles, press releases, technical papers and presentations, and similar publications may acknowledge the

participation of NCAM or its members in the activities of this Agreement. Publications that use the NASA or Langley Research Center name require the prior approval of NASA. However, in accordance with 42 U.S.C. 2459b, NCAM and its members are prohibited from using the name “NASA” in connection with any product or service being offered to the public in a manner reasonably calculated to convey the impression that such product or service has the authorization, support, sponsorship, or endorsement of NASA.

- 18.3 NCAM and its members shall not use the NASA or Langley Research Center name, insignia or seal, or the NASA SATS program logo, on any publication, promotional material, press releases, product or property without the express written consent of NASA.
- 18.4 Each Party will recognize the contributions of the other Party in publications regarding collaborative work.

- Article 19 -
Restrictions on Lobbying

- 19.1 No appropriated funds may be used, directly or indirectly, to pay for any services, communications, written materials, or correspondence intended or designed to influence in any way a Member of Congress to favor or oppose any legislation, including but not limited to legislation related to the SATS program.
- 19.2 No appropriated funds may be used, directly or indirectly, to pay any person for influencing or attempting to influence any Member or employee of Congress or any Federal agency employee in connection with any award in violation of 31 U.S.C. 1352 and the implementing regulations at 14 C.F.R. Part 1271.
- 19.3 Communications with Members of Congress or their staff by NASA regarding NASA’s interests in relation to the SATS program may be made only through the agency’s legislative affairs process.
- 19.4 NCAM and its members may conduct political activities on their own behalf funded with their own resources, but may not in any way represent or create the appearance of representing official NASA interests. No expenses incurred by NCAM or its members for such purposes may be included in NCAM’s cost-share or resource contribution under this Agreement or any other contract, grant, or agreement with the U.S. Government.

- Article 20 -
Liability

- 20.1 Each Party is responsible for performance and costs of its own commitments hereunder.
- 20.2 Except as otherwise stated herein, neither Party shall make any claim against the other Party or the other Party's employees, contractors, or subcontractors, for any injury or death to persons or any loss or damage to property arising from or connected with activities under this Agreement whether such injury, death, loss or damage arises through negligence or otherwise, except in the case of willful misconduct.
- 20.3 Each Party assumes full responsibility and risk for its own actions, omissions, and negligence, and liability for any resulting harm, with regard to flight testing and demonstrations undertaken in connection with this Agreement.
- 20.4 To the extent permitted under applicable law, each of NCAM and its members, severally but not jointly, accepts responsibility for any liability stemming from its own commercial use of products developed, tested, demonstrated, or evaluated under this Agreement, and agrees to hold harmless and indemnify NASA, NCAM, and all other members against any claims of liability (including liability with respect to direct, incidental, or special or consequential damages and any reasonable expenses, legal or otherwise) arising from the indemnifying party's commercial use of such products, or use by the indemnifying party's contractors, assignees, teaming partners, joint ventures, licensees, or others whose use was authorized or approved by the indemnifying party. The scope and objectives of this Agreement do not include the design, testing, or evaluation of products for the purpose of commercial safety or flight qualification or certification.
- 20.5 NCAM agrees to extend all the provisions of this Article to its members as a condition of performing work and receiving Government funding under this Agreement.
- 20.6 The Parties agree that all flight tests and flight demonstrations conducted under this Agreement by either Party, or by any of the NCAM consortium members, shall be subject to prior approval through the NASA flight safety review policies. Flight tests and demonstrations of non-NASA aircraft shall be reviewed as documented in NPD 7900.4A and NPG 7900.3A. Specific procedures for safety reviews shall be documented as an appendix to this Agreement.
- 20.7 With regard to reimbursable activities performed in NASA facilities, NCAM agrees to assume responsibility for any damage to the NASA facility or equipment caused by employees of NCAM and/or its members, beyond the normal wear and tear reasonably expected for the type of activity, and agrees to pay all costs associated with the repair of such damage.

- 20.8 To the extent that a risk of damage, loss, or injury is not dealt with expressly in this Agreement, the Parties' liability to each other arising out of this Agreement, whether or not arising as an alleged breach of this Agreement, shall be limited to direct damages only, and shall not include any loss of revenue or profits or other indirect or consequential damages. This provision does not apply to intellectual property claims.
- 20.9 Nothing herein is to be construed to limit any liability attributable to the failure of either Party to fulfill its obligations, whether arising under this agreement or as a matter of law, to protect proprietary information.
- 20.10 NASA MAKES NO REPRESENTATIONS REGARDING DATA PROVIDED TO NCAM OR ITS MEMBERS NOR ANY REPRESENTATIONS REGARDING DATA PRODUCED IN THE PERFORMANCE OF WORK UNDER THIS AGREEMENT SOLELY BY NASA OR JOINTLY BY NCAM AND/OR ITS MEMBERS AND NASA, AND EXTENDS NO WARRANTIES OF ANY KIND, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE DATA WILL CONFORM TO SPECIFICATIONS, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ANY WARRANTY THAT THE DOCUMENTATION WILL CONFORM TO THE DATA, OR ANY WARRANTY THAT THE DATA WILL BE ERROR-FREE, WHETHER OR NOT THE ERROR IS DISCOVERABLE.
- 20.11 IN NO EVENT SHALL NASA BE LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO DIRECT, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES, ARISING OUT OF, RESULTING FROM, OR IN ANY WAY CONNECTED WITH THE USE OF DATA PROVIDED TO NCAM AND/OR ITS MEMBERS OR THE USE OF ANY DATA PRODUCED IN THE PERFORMANCE OF WORK UNDER THIS MOA SOLELY BY NASA OR JOINTLY BY NCAM AND/OR ITS MEMBERS AND NASA, WHETHER OR NOT BASED UPON WARRANTY, CONTRACT, TORT, OR OTHERWISE, WHETHER OR NOT INJURY WAS SUSTAINED BY PERSONS OR PROPERTY OR OTHERWISE, WHETHER OR NOT DAMAGES ARE BASED ON A THIRD PARTY CLAIM, WHETHER OR NOT LOSS WAS SUSTAINED FROM, OR AROSE OUT OF, THE RESULTS OR USE OF THIS DATA, AND REGARDLESS OF WHETHER NASA SHALL BE ADVISED, SHALL HAVE OTHER REASON TO KNOW, OR IN FACT SHALL KNOW OF THE POSSIBILITY OF THE FOREGOING.

- Article 21 -
Dispute Resolution

- 21.1 Except as otherwise provided in Article 12 and those activities governed by a statutory or regulatory process, all disputes between NASA and NCAM concerning questions of fact or law arising from this Agreement, whether or not alleging breach of this Agreement, shall be raised and resolved only under this provision.
- 21.2 All such disputes shall be referred in writing, including the relevant facts, issues in dispute, and resolution sought, to the designated representatives of each Party. The Parties' representatives shall seek to resolve any dispute by mutual agreement.
- 21.3 If the Parties are unable to resolve the dispute by mutual agreement, the aggrieved Party shall request a final decision from the NASA LaRC Center Director or his designee. The Center Director or designee shall issue a written decision and forward it to both Parties within ninety (90) calendar days from receipt of the request for resolution. This decision shall be the final Agency decision for all purposes including judicial review.
- 21.4 After pursuing in good faith the resolution of disputes as required under this article and the issuance of a final Agency decision, or if a final Agency decision is not issued within the required period, the aggrieved Party may pursue other remedies available by law, including judicial review of the final Agency decision.
- 21.5 NCAM is responsible for resolving disputes between its members. NASA will not intervene or be requested to intervene in disputes internal to NCAM's membership.
- 21.6 NCAM is responsible for raising disputes to NASA on behalf of its members. NASA will not address or resolve a dispute directly with NCAM members.

- Article 22 -
Reporting Requirements

22.1 Technical Progress Report

NCAM shall require each of its members to submit a brief written technical progress report every ninety (90) calendar days describing research activities in performance of this Agreement. Such reports shall include milestones completed

during the reporting period, progress toward subsequent milestones, issues requiring resolution, and any anticipated changes to the work or schedule. NCAM shall collect, organize, and provide such reports to NASA.

22.2 Milestone Slippage Report

Research, testing, and demonstration activities in the annual R&T plan require coordination among NCAM's members and adherence to the annual R&T plan to the greatest extent practicable. NCAM shall notify NASA as soon as possible when its members will be unable to meet a milestone in the annual R&T plan or tasks. Notification shall be made within one week of identification of the anticipated milestone slip and shall include a description of the problem, proposed corrective action, and any necessary schedule or budget revision.

22.3 Intellectual Property Reports

NCAM shall submit to NASA reports regarding the intellectual property developed by its members in performance of activities under this Agreement as specified in the relevant appendix and in compliance with the requirements of 35 U.S.C. 202(c) and 42 U.S.C. 2457.

22.4 Commercialization Reports

NCAM shall provide an annual, non-proprietary status report documenting how its members are promoting commercialization of SATS technologies. Specifically, NCAM will report effort its members have taken to achieve open standards in support of SATS deployment, gated standards that will be restricted initially and will move toward open standards, and discrete plans for commercialization. NCAM shall provide the report and a summary to NASA by December 31st of each year.

22.5 Equipment Reports

NCAM shall submit an annual report confirming the possession and good condition of NASA provided equipment in the custody of its members as of September 30th of each year. Such report also shall list any NASA provided equipment lost or damaged during the year. The report shall be submitted in writing to NASA by October 31st of each year.

22.6 Financial Reports

NCAM shall submit to NASA quarterly financial reports documenting the workforce hours, actual incurred costs, and in-kind resource contributions of its members, by task, in performance of this Agreement. Such reports shall include actual incurred costs compared to planned costs and shall separately list costs for equipment and travel. Such reports shall be submitted electronically. NCAM

also shall comply with interim informal inquiries and requests by NASA for supporting documentation. NCAM and NASA will prepare an annual financial report covering SATS expenditures for the prior fiscal year.

22.7 Audit Reports

NCAM shall conduct financial audits of at least 10% of its funded membership each year for compliance with the requirements of this Agreement and will provide the results to NASA in an annual report. NCAM shall conduct a final cost-incurred audit of the overall effort at the end of this Agreement and shall submit the report to NASA in accordance with the termination provisions in Article 24. Audit plans shall be negotiated and agreed between the Parties not less than 120 calendar days in advance of the first annual audit and shall be documented as an appendix to this Agreement.

- Article 23 -

Retention and Audit of Records

- 23.1 NCAM and each of its members shall retain financial records, supporting documents, statistical records, and all other records (or microfilm copies) pertinent to this Agreement for a period of six (6) years following expiration or termination of this Agreement.
- 23.2 A member of the NCAM consortium that terminates its participation prior to expiration or termination of this Agreement shall retain such records for six (6) years from the date of its termination.
- 23.3 If any litigation, claim, or audit is started prior to expiration of the six-year retention period, the records shall be retained until all litigation, claims, or audits involving the records have been resolved.
- 23.4 Records of non-expendable property acquired with funds provided under this Agreement shall be retained for a period of six (6) years after final disposition of the property.
- 23.5 The NASA Administrator and the Comptroller General of the United States, or their authorized representatives, shall have access to any pertinent books, documents, papers, or other records of NCAM and its members and its subcontractors to make audits, examinations, excerpts, and transcripts during the term of this Agreement and for at least three (3) years following termination of this Agreement.

- Article 24 -
Termination

- 24.1 NASA may terminate this Agreement upon written notice to NCAM ninety (90) days in advance. In the event of termination, NCAM may receive payment for costs incurred prior to the date of termination that meet the conditions of Article 10.3.2.
- 24.2 NCAM may terminate this Agreement upon ninety (90) calendar days written notice to NASA and completion of all responsibilities under the current annual R&T plan, whichever occurs later.
- 24.3 Change in the membership of the NCAM consortium or termination of any member's participation does not terminate this Agreement. NCAM remains responsible for performance of all responsibilities under the current annual R&T plan regardless of the status of its membership, unless the Parties mutually agree to modify the annual R&T plan and reduce funding accordingly.
- 24.4 NCAM shall require its members to give ninety (90) calendar days written notice of termination of their participation in work under this Agreement and shall require such members to complete tasks assigned to them under the current annual R&T plan.
- 24.5 The Parties agree that the obligations of Articles 16, 17, 18, 20, and 23 continue to apply after termination or expiration of this Agreement.
- 24.6 Upon termination or expiration of this Agreement, NCAM agrees to provide all final reports required herein within sixty (60) calendar days. Each Party shall return all property and equipment borrowed from the other Party within sixty (60) calendar days of termination or expiration of this Agreement, unless the other Party expressly waives this requirement in writing.

- Article 25 -
Annual Certifications

NCAM shall require those of its members receiving NASA funding under the annual R&T plan to annually certify in writing, prior to obligation of NASA funding by the contracting officer, as follows. In the event there is a change in the member designated to perform a task after approval of the annual R&T plan, NCAM shall also require the new member to provide the following certifications prior to commencing the task or incurring costs for the task.

- 25.1 The member's resource contributions to this Agreement have not been charged to the Federal Government under any other contract, grant, or agreement except to the extent allowable as IR&D costs.
- 25.2 The member is not presently debarred, suspended, proposed for debarment, or otherwise declared ineligible for award of funding by any Federal agency.
- 25.3 The member has not been convicted or had a civil judgment rendered against it within the last three (3) years for fraud in obtaining, attempting to obtain, or performing a Government contract.
- 25.4 Members who receive \$100,000 or more in NASA funding for work performed under this Agreement must certify that they have not used any appropriated funds for lobbying purposes prohibited by 31 U.S.C. 1352.
- 25.5 Commercial members shall certify that they are majority owned and controlled by United States citizens or are incorporated to do business in the United States, and conduct a substantial portion of their research, development, and manufacturing activities in the United States. They shall certify that they will conduct all research and development activities under this Agreement in the United States, and will substantially manufacture in the United States any products developed pursuant to this Agreement. University and non-profit members shall certify that they are state or local government organizations or private organizations majority owned and controlled by United States citizens.
- 25.6 The member shall certify that it agrees to and will abide by the terms of this Agreement.

- Article 26 -
General Provisions

- 26.1 Neither Party may assign, transfer, or otherwise convey any or all of its rights or obligations hereunder. However, the Parties may assign, transfer, or otherwise convey rights to intellectual property consistent with the terms of this Agreement.
- 26.2 If one or more of the terms in this Agreement, including appended materials, or any future instrument executed in connection herewith, shall be found invalid, illegal, or unenforceable in any respect under any applicable law, the validity, legality, and enforceability of the remaining terms shall not in any way be affected or impaired.

- 26.3 This Agreement is governed and construed under the federal laws of the United States, including but not limited to determining the validity of the Agreement, the meaning terms contained herein, and the rights, responsibilities, and obligations of the Parties.
- 26.4 This Agreement embodies the complete and entire understanding of the Parties and supercedes any previous communications or representations, whether written or oral, between the Parties relating to the subject matter of this Agreement.
- 26.5 The Parties to this Agreement are independent of each other and nothing herein shall be deemed to create any legal partnership, joint venture, association, or other legal relationship between the Parties. Neither Party shall have authority to create any obligations for or on behalf of the other Party.
- 26.6 The Appendices attached hereto are incorporated by reference and made part of the terms of this Agreement. Appendices become effective and part of this Agreement when executed by both Parties.

Ruth M. Martin
Associate Director
for Program Integration
NASA Langley Research Center

Keith F. McCrea Date
Chairman of the Board of Directors
National Consortium for Aviation Mobility

John F. Sheehan Date
Executive Director
National Consortium for Aviation Mobility

- Appendix 1 -
Definitions

The following definitions apply throughout this Agreement, including appendices:

Background Data means data developed prior to or outside of this Agreement at the expense of the developing entity, which the developing entity considers to be a trade secret or proprietary information.

Background Intellectual Property means intellectual property developed prior to or outside of this Agreement at the expense of the developing entity.

Data means recorded information, regardless of the form, the media on which it may be recorded, or the method of recording. The term includes, but is not limited to, information of a scientific or technical nature, computer software and documentation thereof, and information of a commercial or financial nature.

Days mean calendar days.

Invention means any innovation or discovery (including software) which is or may be patentable or otherwise protectable under Title 35 of the United States Code (U.S.C.).

Made, when used in relation to any invention, means the conception or first actual reduction to practice of such invention.

Member means any entity participating in activities under this Agreement as part of the National Consortium for Aviation Mobility (NCAM).

Non-profit organization means a domestic organization of the type described in section 501(c)(3), and exempt from taxation under section 501(a), of the Internal Revenue Code of 1954, as amended, 26 U.S.C. 501.

Practical application means to manufacture, in the case of a composition of product; to practice, in the case of a process or method; or to operate, in the case of a machine or system, and, in each case, under conditions as to establish that the invention is being utilized and that its benefits are, to the extent permitted by law or Government regulations, available to the public on reasonable terms.

Proprietary Information means information embodying trade secrets as defined under 18 U.S.C. 1905 or comprising commercial or financial information that is privileged or confidential, excluding such information that: is in the public domain at the time of disclosure or thereafter enters the public domain without breach of the entity receiving the information; is known to the receiving entity at the time of disclosure; has been disclosed to the receiving entity without restriction from the disclosing entity; has been

independently developed by the receiving entity; or has become known to the receiving entity without similar restrictions from a source other than the disclosing entity, that source having the right to disclose.

Reportable item means any invention, discovery, improvement, or innovation of a member of the NCAM consortium, whether or not the same is or may be patentable or otherwise protectable under Title 35 of the U.S. Code, conceived or first actually reduced to practice in the performance of any work under this Agreement or in the performance of any work that is reimbursable under any clause of this Agreement providing for reimbursement of costs incurred prior to the effective date of this Agreement.

SATS facility or SATS project facility means the premises located at 3130 N. Armistead Avenue, Hampton, Virginia.

Small business means a domestic concern as defined at 15 U.S.C. 632 and implementing regulations. The size standards for small business concerns at 13 C.F.R. 121.3-8 and 13 C.F.R. 121.3-12 will be used.

Subject invention means any invention of a member conceived or first actually reduced to practice in the performance of, as a consequence of, or in direct relation to activities under this Agreement.

Substantially manufacture means to produce at least 51% of the product under consideration.